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ABSTRACT

This monograph organizes available information pertaining to case difficulty and change in vocational rehabilitation clients in the physical, educational, psychosocial, economic, and vocational areas. The need for such an evaluation method has grown out of the tremendous expansion of rehabilitation services which has rendered the old closure system of evaluation not only inadequate but detrimental to the achievement of goals. The report discusses in detail several variables which must be considered in adopting an evaluation method. They are: (1) client characteristics as they relate to rehabilitation success; (2) case difficulty; and (3) client change. An employability model of evaluation is recommended because, within its context, it would be possible to establish the client's level of functioning on entry into the program, thereby establishing the severity of the handicap. At closure the client status on the same variables could again be measured. The final measure not only gives information as to the client's status at closure, but also, when compared to the previous measure, provides an index of client change. (Author/PC)

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Monograph I

CASE DIFFICULTY AND CLIENT CHANGE

A Review of the Literature

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CG 009 309

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PREFACE

Assuming that measures of case difficulty and client change could be formulated, Oklahoma's Rehabilitation Agency approached the Department of Health, Education, and Welfare for the funding of such a project. Funds were made available (EV-3-71) and the Service Outcome Measurement Project began on June 16, 1971.

The project is designed to develop a measure which will reflect the relative difficulty of cases and measure client change in the physical, educational, psychosocial, economic and vocational areas. This project is unique in that it is totally housed and administered by the Oklahoma Rehabilitation Agency. This is indicative of the amount of energy not only Oklahoma but all of the participating states are willing to invest in the solution of this problem.

ACKNOWLEDGEMENTS

Undoubtedly, a project of the scope and size of the Service Outcome Measurement Project must draw on innumerable resources. Acknowledgement of all of the people involved in the project is not possible. However, we would like to take this opportunity to note that we greatly appreciate their interest and participation.

At the onset of the project an Advisory Committee was formed to direct it to a productive end.

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The guidance and advice of these individuals have been invaluable.

Data collection relies heavily on Liaison Personnel in each participating state outside Oklahoma. The project staff is indebted to:

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The secretarial staff--Cleta B. Howe, Terri Lyday, and Pauline Schwedland--cannot be thanked enough for their willingness to type and handle the many rewrites and updates.

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INTRODUCTION

This monograph organizes available information pertaining to case difficulty and client change in vocational rehabilitation. Need for this monograph is reflected in growing public concern for accountability of public programs. Articles voicing concern are readily found in newspapers and periodicals. In turn, this concern has become official. The House Committee on Education and Labor, in their report to accompany the Rehabilitation Amendments of 1972, states that in the future:

> The Committee will ask not solely how many persons were processed, served and rehabilitated, but also how difficult was the task and how much change was effected in each individual client (Report No. 92–928, p. 3).

The report also states:

> The Committee believes that the vocational rehabilitation program for the disabled is too important a program for the nation's handicapped to have its effectiveness diluted as a result of administrative practices which encourage abuses and result in denial of services to those who need them the most (Report No. 92–928, p. 7).

Vocational rehabilitation agencies traditionally and currently evaluate the success of their programs by the number of people rehabilitated, i.e., those remuneratively employed or able to meet their own needs.

Historically, the dilemma of closure and difficulty developed as administrators found it necessary to report the value of their programs to legislators in order to obtain funds. Reporting the number of people rehabilitated represented easily collected data for reporting rehabilitation agencies' activities. In addition, legislators could easily grasp the concept of quantity while the quality of services was not only more difficult and time-consuming to measure, but also more difficult to understand in terms of value received for the tax dollar.

The rehabilitation process has become far more complex than it was at the time the closure system was developed. Rehabilitation has expanded its enterprise to include many diverse groups with equally diverse needs and, at the same time, has expanded the type and quality of services provided to the client. This tremendous growth and expansion of rehabilitation services has rendered the old closure system not only wholly inadequate but also detrimental to the achievement of its goals. The effects

of the present closure system can be detected in all strata of the vocational rehabilitation program.

Counselors indicate that they recognize the equivocal differences of difficulty in the clients they serve and the unequivocal methods used to evaluate their caseloads. Muthard and Miller (1966) state:

> Today, attitudes toward rehabilitation closures as the major criteria for rehabilitation success range from complete rejection to realistic acceptance. Even in the fact of the latter view, which holds that continued support for and expansion of rehabilitation services is contingent upon rehabilitating more and more clients, many counselors and other leaders in vocational rehabilitation are dissatisfied with closures as the complete criteria. One alternative, often discussed but never systematically implemented, would use the *quantity* and *quality* of rehabilitation *services* rather than closures alone as a basis for describing the merits of the state-federal program to legislators and the community (Muthard and Miller, 1966, p. 57).

Using closures as an accounting or evaluation method has several inequities, as pointed out by Viaille (1968), who states:

- It tends to emphasize numbers rather than the quality of services.
- It may tend to emphasize relatively non-complex cases requiring little counselor time.
- It may tend to encourage closing a client's case before it is ready to close, in order to meet a quota.
- It may tend to encourage keeping a client on the caseload longer than should be, in order to assure meeting next year's quota.
- It tends to make it difficult to obtain an even flow of work throughout the year.
- It is a difficult procedure to apply in areas of specialized counselors.
- It does not allow credit to the counselor for the amount of work or efforts expended on cases closed non-rehabilitated (Viaille, 1968, pp. 14–15).

The 1968 Citizen's Advisory Committee on Vocational Rehabilitation Report to the Secretary of Health, Education, and Welfare recommended that a system of evaluation be developed that would allow the counselor credit for differential levels of client difficulty. The recommendation had been previously suggested by Muthard (1965) and was reiterated by Silver (1968).

Although the variables and interrelations among variables relating to case difficulty and client change have not been precisely defined, enough is known to start work on a system that will alleviate some of the adverse effects of the "26" closure system.

CHAPTER I

Client Characteristics Related To Rehabilitation Success

The two major defining characteristics of case difficulty that recur in discussions and in the literature are: 1) probability of successful closure, and 2) counselor time and effort. Although these two characteristics are not synonymous, there is considerable overlap. The frequent utilization of rehabilitation success, e.g., 26 closure, as a criterion measure in evaluating difficulty indexes and weighting systems emphasizes the concern with the probability of successful closure aspect of case difficulty. The rationale behind the emphasis on probability of success is simply that harder cases should be rehabilitated less often. Although the studies presented in this chapter do not deal with difficulty per se, they do provide a starting point leading to understanding the problem of case difficulty.

Although there have been numerous studies of the relationship of client characteristics and rehabilitation success, the results have often been conflicting. Usually, these studies take the form of predicting rehabilitation success, or are after-the-fact determinations of variables which have statistically "significant" relationships to outcome. Following are summaries of literature reviews and recent research into client characteristics and rehabilitation success.[1]

Demographic Variables

Sankovsky (1968) reviewed the literature on prediction of rehabilitation success and found only two variables having any clear relationship to outcome of rehabilitation services. If the age at onset of disability was under 30, there seemed to be a greater likelihood of successful closure. Also, if the client was not receiving public assistance, there was usually more possibility of successful closure than if some public assistance was available.

Sankovsky (1968) also reported a number of variables as suggestive of an indirect relationship to outcome. Trends noted were as follows:

1. Clients younger in age at time of referral may have a better chance of successful

[1] If the reader is intrested in detailed information on individual studies, refer to the articles and reviews cited. Czerwionka, James. and Birch, Jack W. (Eds.), *Abstracts of Articles on Assessment and the Socially Handicapped*, Research and Training Center in Vocational Rehabilitation School of Education, University of Pittsburgh, Pittsburgh, Pennsylvania, and Cobb, H.W., *The Predictive Assessment of the Adult Retarded for Social and Vocational Adjustment; A Review of the Research*, Department of Psychology, University of South Dakota, Vermillion, South Dakota (1966).

rehabilitation than older clients.

2. Clients' level of education had some importance in successful rehabilitation, but did not predict, by itself, outcome.
3. The married rehabilitation client may be easier to rehabilitate than the unmarried client.
4. Number of dependents may have some bearing on rehabilitation outcome.
5. An unusual positive trend in terms of employment was noted in the relationship between a stable employment history and outcome. A negative trend was noted, however, between stable employment history and completion of the rehabilitation program.
6. Clients referred by educational facilities tended to fare better than those referred by welfare agencies.
7. Although far from conclusive, psychological disabilities may be the most difficult to rehabilitate and respiratory and orthopedic disabilities the least difficult.
8. Degree of disability may be related to outcome, but it was a very poorly defined and complex variable which involved more than the disability itself.

Hammond, Wright, and Butler (1968) reviewed the literature relevant to client characteristics and the prediction of success. They compared several studies and reported the identification of 25 variables reflecting *nonfeasibility*. These variables were found significant in at least one study. If the results of studies conflicted, variables were included if they were found significant in two or more studies. These variables were

> ...Confirmed by having been reported in more than one of the studies or by their general agreement with currently accepted rehabilitation counseling theory. The variables identified were the following: (a) age, i.e., relatively older; (b) age at disablement, i.e., congenital or relatively older; (c) married, with the exception of the adolescent client; (d) having no dependents or children, with the exception of the adolescent client; (e) relatively little participation in social activities; (f) not attending church; (g) relative lack of education; (h) relatively low intelligence level; (i) race, i.e., nonwhite; (j) arrest record or history of anti-social acts; (k) history of alcoholism; (l) neutral or negative family attitude toward rehabilitation; (m) not living with family; (n) having a family relationship other than close; (o) SSDI benefit recipience or application; (p) possessing some general health problems aside from disability; (q) not owning automobile or home, with the exception of the adolescent client; (r) lower socioeconomic status; (s) lower occupational level, with the exception of the adolescent client; (t) lacking record of full employment or job adjustment, with the exception

of the adolescent client; (u) main support from source other than wages, with the exception of the adolescent and the homemaker; (v) referral from a hospital or medical center; (w) disability: mental retardation or psychiatric disturbance; (x) welfare recipience; and (y) personality traits: passive dependency, having relatively low level of ego strength (Hammond, Wright, and Butler, 1968, p. VI–15).

Day, Cummings, Anderson, and Iverson (1969) surveyed 66 studies of client characteristics as they related to outcome. In contrast to the findings of Sankovsky and Day, et al, these researchers reported consistent, significant relationships to outcome for the following variables: (a) age, (b) education, (c) assumption of responsibility, (d) sex, and (e) intelligence.

The inconsistency among these reviews points out the failure of research in the prediction of rehabilitation success to produce clear relationships between demographic variables and success in rehabilitation. The application of multiple variable analysis to the prediction of success has also proven of only marginal usefulness. Sankovsky (1968) reviewed several studies which utilized multiple variable analysis and concludes:

> The findings reported on the analysis of multiple variables indicate that rehabilitation outcome can be predicted but the probability of successful prediction is so small that it serves little functional purpose. Predicting from 10 to 20 percent above chance can be utilized in mass screening of clients but is relatively meaningless when application is on an individual basis (Sankovsky, 1968, p. 23).

Grigg, Holtmann, and Martin (1970) studied fourteen research and demonstration projects directed toward rehabilitating disabled public assistance clients. They looked at variables relating to acceptance into the programs as well as outcome. Of the 7,694 cases which were reviewed, 2,614 were accepted for services, giving an approximate acceptance rate of one out of three.

The variables they found as having the strongest relationship to acceptance into the programs were (in order of importance):

(1) The kinds of evaluative services received by the client during referral; including counselor interviews and other evaluative procedures
(2) Type of disability (most often accepted was amputation or deformity of body parts, mildly severe psychological problems, and mental retardation)
(3) Race-ethnic group (blacks being accepted less)
(4) Some part-time work in past year
(5) Age
(6) Education

The variables having the strongest relationship to outcome were (in order of importance):

(1) Total of all Vocational Rehabilitation and Public Welfare Services received

during the project
(2) Types of public assistance at referral
(3) Some full-time work in the last year
(4) Types of disability; included presence of secondary disability
(5) Age

Both race-ethnic group and education became nonsignificant sources of variation when related to program outcome. It is important to note that demographic data, at least in these studies of Public Assistance recipients, exert most of their influence in relation to acceptance. As Grigg, et al. (1970) noted, the selection process is quite different from the rehabilitation process, and although demographic data may be related to acceptance into the program, once in the program there is a great emphasis on getting all clients rehabilitated.

In the studies reviewed so far, the emphasis has primarily been on demographic data and their relation to rehabilitation success. Demographic data are studied not so much because variables, such as age, race, sex, etc., are problems in and of themselves, but because these may be indicators of a predisposition toward certain attitudes and behavior which may help or hinder the client in the rehabilitation process. Demographic data has the advantage of being readily available and not subject to the problems of measurement inherent in psychological tests, rating scales, and social surveys. However, demographic data have not been shown to bear any consistent relationship to outcome.

The variation within demographic groups on relevant employment related attitudes and behavior is too large to effectively use this approach except for global predictions. Other problems with many of the prediction studies that use demographic data have stemmed from methodological problems and will be discussed in Chapter III.

Psychological Tests

Several studies have utilized psychological tests to supplement or strengthen demographic data as predictions of rehabilitation success. However, research with the Minnesota Multiphasic Personality Inventory (MMPI) has not met with much success (Ayer, Thoreson, and Butler, 1966; Gilbert and Lester, 1970; Pearlman and Hylbert, 1969).

Ayer, et al., (1966) studied MMPI data on rehabilitation clients. This data was available on clients who were referred for psychological evaluations. Ayer, et al. found that none of the MMPI scales by themselves were significantly related to closure status. However, significant weights in a regression equation for prediction of closure status (R .65) were reported for the Masculine Feminine (MF), correction (K), and Psychopathic Deviate (PD) scales in conjunction with intelligence and age at application. These results should be interpreted with caution due to the small sample size and the fact that only those clients referred for psychological evaluation were included in the study.

Pearlman and Hylbert (1969)

utilized ten demographic variables the MMPI, and the Army General Classification Test in an attempt to identify potential dropouts from vocational training in comprehensive rehabilitation centers. While they found some demographic variables to be statistically significant, their study did not support Ayer's, et. al. (1966) suggestion that psychometric data combined with demographic variables could improve predictive efficiency.

Gilbert and Lester (1970) collected demographic data and administered the MMPI, the Rorschach, the Kuder Personal Preference Record, and the Wechsler Adult Intelligence Scale to 133 clients. The sample was divided into three criterion groups: (a) rehabilitated (employed or attending school); (b) non-rehabilitated due primarily to physical considerations; and (c) non-rehabilitated as a result of a motivational deficiency. The rehabilitated group members:

> ...Demonstrated relatively favorable psychological resources, both intellectual and emotional, had a slightly higher level of formal education, and were more frequently unmarried (Gilbert and Lester, 1970, p. iv).

Non-rehabilitated subjects who manifested a motivational deficiency, were characterized by a marginal level of personal adjustment, and were usually married. The group of clients not rehabilitated due to physical considerations resembled the other non-rehabilitated group, but were considered to be better adjusted psychologically.

The value of psychological tests in predicting rehabilitation success seems limited. Ayer, et al. (1966) and Gilbert and Lester (1970) suggested that standardization of psychological tests for disabled populations might well render test data more meaningful in a rehabilitation setting. However, even if psychological tests were standardized on disabled populations, and the relationships between psychological characteristics and critical job behaviors were established, the time required to administer the tests would prohibit using them as a part of an ongoing system of weighting cases.

Psychosocial Factors

The lack of results with psychological tests does not mean that psychological factors do not play an important role in rehabilitation. Wright (1968) sought counselor opinions and ideas on the rehabilitation process. Two hundred and eighty rehabilitation counselors in five midwestern states were interviewed using a standard format. Counselors perceived the major problems of their clients as:

1. Lack of motivation, dependent and passive attitudes (reported by 44 percent.)
2. Unrealistic vocational goals (reported by 21 percent.)
3. Undesirable personal characteristics and intense emotional problems (reported by 19 percent.)
4. Unrealistic attitudes toward employment procedures and toward seeking employment (reported by 29 per-

cent.)

5. Physical characteristics, cosmetic effect, and quirks to which employers respond negatively (reported by 21 percent.)

On the subject of client's motivation, the counselor's remarks were summarized into three patterns for explaining lack of motivation: (a) client is receiving some form of financial aid which he feels rehabilitation would disrupt; (b) client feels hopeless, depressed, disenchanted, etc.; and (c) client ascribes authoritarian role to counselor and passive role to himself.

Although motivation may be generally considered by counselors as an important factor in the client's rehabilitation, it has not been a useful concept in rehabilitation research. Barry and Malinovsky (1965), after reviewing the literature on client motivation, state:

> ...the concept of motivation is almost too broad, too complex, and too inclusive to usefully stimulate and aid in the improvement of rehabilitation practice and research (Barry and Malinovsky, 1965, p. 51).

Lane and Berry (1970) summarized the literature on client motivation published since Barry and Malinovsky's review in 1965. They found little research dealing with motivation, per se, and an increasing emphasis on self-concept and the social system involved in rehabilitation. They state that:

> Instead of treating motivation as some vaguely defined internal entity, it will certainly be more useful to deal with behavior in terms of the variables of which it is a function (Lane and Barry, 1970, p. 23).

They classified variables into intrinsic (organism) and extrinsic (environmental) motivational variables. They note that self-concept and related attitudes are emerging as important intrinsic variables not only for prediction of rehabilitation outcome but also for overall social and vocational adjustment.

It is evident that psychosocial variables may play an important role in rehabilitation. However, psychosocial variables are elusive and difficult to measure and evaluate. A major problem with research in the psychosocial area is the tendency to use terms such as ego strength, hostility, motivation, and other vaguely defined psychological traits. It might be more profitable, at the present stage of research into psychosocial factors and rehabilitation, to use terminology and concepts relating specifically to the work situation. For example, the client's concept of himself as a worker may be easier to measure and be more responsive to the present needs of rehabilitation than a generalized idea of self-concept.

Summary

Literature on client characteristics and rehabilitation success is extensive; however, this research has failed to demonstrate consistent relationships between client characteristics and rehabilitation success. Part of this problem stems from methodological problems and will be elaborated

on in Chapter III.

Although numerous studies have employed collections of demographic variables, there does not seem to be consistent agreement even among reviewers (Day, et al., 1969; Hammond, et al., 1968; and Sankovsky, 1968) as to relationship of demographic variables to client success. Grigg, et al. (1970) found that demographic data played a role in acceptance into the program, but was of little importance in explaining outcome.

In an attempt to strengthen the predictive value of demographic data, it has been supplemented by psychological test data. The addition of test data, however, has proven to be of little value. Ayer, et al. (1966) and Gilbert and Lester (1970) indicate that the seeming lack of power of psychological tests may be due to the fact that the tests have not been standardized on disabled populations. Another possible explanation is that psychological tests may be maximizing individual psychological differences to the point of obscuring critical employment-related attitudes and behavior. This does not mean that psychosocial variables are unimportant. The work of Wright (1968), Lane and Barry (1970), and Dawis, England, and Lofquist (1964) indicate their importance. Psychological factors may play an important role in the client's rehabilitation, but they have proven difficult and time-consuming to define and measure.

The next chapter presents studies directed specifically to the problem of measuring case difficulty. Many of these studies closely resemble the studies mentioned in this chapter in the use of demographic data and rehabilitation success as the criterion variable.

CHAPTER II

Research Into Case Difficulty

In the previous chapter, studies were reviewed that attempted to relate client characteristics to success in rehabilitation. The material presented in this chapter focuses more directly on case difficulty. Although it is generally agreed that cases do differ in relative difficulty, there is considerable argument over how to evaluate difficulty and what makes a case difficult.

Silver (1967) designed a study to evaluate the efficacy of weighting case closures. After determining that no formal method of weighting case closures existed, and counselors desired such a

system, she designed three scales to evaluate difficulty by disability groups. Using paired comparison and semantic differential methods, counselors were asked to rate disabilities in terms of the time and effort they believed it would take to gain a case closure. Fifteen disabilities were studied and rank ordered by all three scales. In each of the three scales consistency was found and tendencies toward clustering were noted. When all three scales were considered, the following arrangement emerged:

Rank 1.	Cerebral Palsy (most difficult)
Rank 2.	Mental Illness
	Epilepsy
	Amputation of Upper Extremities
	Paraplegia
	Post Stroke
	Mental Retardation
	Amputation of Lower Extremities
	Cardiac Condition
Rank 3.	Arrested Tuberculosis
	Hearing Loss
	Diabetes
Rank 4.	Dental
	Hernia

(Silver, 1967, p. 53)

Silver did not go on to develop an actual weighting system, noting that such a system should include more than one client characteristic, i.e., disability.

Whether asked to rank one aspect of a case as disability (Silver 1967), or reporting on client problems (Wright 1968), counselors demonstrated a great amount of agreement. This indicates that counselor judgment could be a useful supplement to rehabilitation success as a criterion measure for research into case difficulty.

Difficulty Indexes

Several attempts have been made to devise systems to weight cases; however, most of these systems are based wholly on successful closure as a criterion. Muthard (1965) proposed such a system, stating:

> First of all, it seems reasonable to assume that *fewer* difficult and complex cases result in "12" closures (successful). In fact, an operational definition of case difficulty and complexity could be the number of cases-of all cases like these--which achieved rehabilitation status. Thus, the question of building a set of complexity weights, or "norming" case difficulty, becomes one of figuring out what variables within cases make a difference in terms of later success. We can then build sub-populations of "cases-like-these" to see what percentage of each sub-population is achieving "12" closure (successful) status. On the basis of these percentages, we can then "norm" the cases for complexity (Muthard, 1965, p. 31).

A method similar to the one proposed by Muthard was developed by Miller and Barillas (1967) to deal with the problem of case complexity. They examined 6,256 case closures in terms of four variables: education, disability, age and referral source. Subpopulations were derived by match-

ing clients on these variables. The percentage of successful closures for each group was compared with the percentages of all other closures for that group. The Strong Tables for weighting differences in percentages (England, 1961) were used to assign weights for each sub-population. They reported that the weighted successful closures correlated negatively, although at a statistically non-significant level, with the number of successful closures. This was interpreted to suggest that any increase in number of successful closures might be the result of working with easier cases.

Using essentially the same technique, Wallis and Bozarth (1971) examined two weighting systems to differentiate complexity of cases. Only those cases accepted for services were studied. The systems were as follows:

System I: This system utilized variables of age (35 years and less, 36 years and more), and education (8th grade and less, 9th grade and more). The disabilities were classified into six major categories: visual impairments; hearing impairments; orthopedic deformity of functional impairment; absence of amputation of major or minor members; psychological impairment – mental, psychoneurotic, and personality disorders; and other disability conditions.

Type of previous service was used as a fourth variable. This included: no prior service; previous rehabilitation; previous non-rehabilitation; and previous ineligible.

System II: This system allowed for finer differentiation of age (19 years and less; 20 through 44 years; 45 and over) and education (8th grade and less; 9th through 12th grades; 13 grades and over). Disability groupings were the same as those used in System I (Wallis and Bozarth, 1971, pp. 56–57).

Rationale for method of assignment of weights was based upon the model by Miller and Barrillas (1967) cited earlier.

System I generated 24 subgroups of which only three had weights greater than one. Of 35 subgroups generated by System II, only four had weights greater than one. This indicated that the major proportion of clients were rehabilitated regardless of the combination of variables. Therefore, the authors leave open the possibility that the most complex cases may be a subset of those cases not accepted for services, and therefore not included in the study. The authors conclude that

> ...the weighting systems investigated offered no better assessment than the present closure goals which allows one credit for each 26 closure (Wallis and Bozarth, 1971, p. 58).

Sermon (1972) used a slightly different approach and developed an Index of Case Difficulty based upon a formula of national success rates for disability categories. A Case Difficulty Index (C D I) was computed using the formula:

$$C\,D\,I = (1.000 - P) \times 10$$

or

$$CDI = Q \times 10$$

Where:

CDI is case difficulty index for any given disability category.

P. is percent rehabilitated nationally for any given disability category.

Q. is percent not rehabilitated nationally for any given disability category.

This method gives a possible range from zero to ten of any disability category. From this measure a Total Weighted Closure Index (TWCI) is derived by summing the C D I's for all clients on a caseload. Average Weighted Closure Index (AWCI) was simply the average C D I for a given caseload.

Computing TWCIs and AWCIs on the 30 Minnesota counselors, Sermon (1972) found that TWCIs correlated .94 and AWCIs correlated .32 with the number of cases rehabilitated. The TWCIs did discriminate between counselors with equal or similar numbers of rehabilitations, but no information is given as to whether the discriminations were valid in terms of the actual difficulty these cases represented to the individual counselors. The advantages of this type of index are that it is simple and adjustable yearly and, therefore, is able to reflect changes in treatment technology. However, by using percent rehabilitated in each disability group as a base measure and establishing the base on a national sample, the effect of other variables is averaged out. This method may be usable for establishing difficulty on a large scale, but results in a system of no real utility when applied to an individual case.

While simple single factor indexes may be of little real utility, Kunce (1971) warns that highly sophisticated procedures, may lead to "statistical overkill." Statistical overkill may produce highly significant results which cannot be generalized. Kunce, Mahoney, Campbell, and Finley (1969) devised a simplified weighting system using available client information which related to outcome with culturally disadvantaged clients. They chose ten factors which appeared to influence outcome with clients in the Puritt-Igoe Rehabilitation Project. Index scores could vary between zero and ten depending on the presence or absence of these ten factors. They found that as index scores increased, the percent of clients successfully employed decreased.

Further study using a simplified prediction index approach was done by Kunce and Miller (in press). In this study, data from the standard closure (R-300) was used and the sample included all clients closed after acceptance as rehabilitated and not rehabilitated by two midwestern states. The index was composed of personal information taken from the R-300 which had a "common sense" relationship to employment. A minimum and maximum score was set at zero and two. The variables and values were:

1. *age*--40 (2), 40–54 (1), 55 (0);
2. *selective service*--not rejected (2), all others (0);
3. *race*--white (2), nonwhites

(0);

4. *number of dependents*--1 or more (2), none (0);
5. *education*--12 or more years (2), 7–11 (1) 6 or less (0);
6. *earnings per week at acceptance*--$60 (2), $40–$59 (1), $40 (0);
7. *employment at acceptance*--employed in competitive labor market (2), employed in a sheltered situation (1), not working (0);
8. *welfare status*--not on public assistance (2), on any type of public assistance (0);
9. *social security disability status*--not known as an applicant (2), a denied applicant (1), applicant allowed or pending (0);
10. *physical disabilities*--only one disability identified (2), secondary disability identified (0);
11. *marital status*--ever married (2) never married (0);
12. *previous rehabilitation client*--yes (2), no (0)

Index scores could range from zero to 24, with higher scores having a more favorable prognosis. Three criteria variables indicating occupational adjustment also taken from the R-300 were:

1. *rehabilitation outcome*--successful closure, R-300 code 26 (4); not rehabilitated, R-300 code 28 (3); not rehabilitated, R-300 code 30 (2); and not rehabilitated, other R-300 codes (1);
2. *work status at closure*--employed in competitive labor market (2), employed in a sheltered situation (1), not working (0); and
3. *earnings per week at closure*--$60 (2), $40–$59 (1), $40 (0).

Of the 36 possible relationships, chi square analysis showed thirty were significant at the .01 level in the hypothesized direction while three were significant in the opposite direction. Fewer young clients were placed than expected, and single clients did better in terms of placement in competitive employment and weekly earnings than expected. The index total was significant at the .001 level to the three criteria. Index totals correlated .24 with rehabilitation outcome, .26 with work status, and .35 with earnings at closure. Stepwise regression analysis yielded multiple correlations of .31 with rehabilitation outcome, .37 with work status at closure, and .35 with earnings at closure.

Kunce and Miller concluded that:

> These results provide substantial evidence for the validity generalization of the simplified prediction procedure used in previous studies [Kunce and Miller (in press)].

The authors in this section have defined difficulty in terms of the presence or absence of various client characteristics associated with successful closure. The use of the simple concept of successful closure as a measure of performance for the rehabilitation counselor has been roundly criticized (Hansen, 1970: NCACVR, 1968). Yet, many investigators attempting to determine methods of establishing difficulty as an alternative to the closure system have utilized this very same closure system as the criterion variable in their studies. Kunce and Miller made a small departure from the basic

closure criterion. Miller and Barillas (1967) also attempted to correlate their index with other measures of client satisfaction and supervisor ratings of the counselor; however, all correlations were nonsignificant.

Administrative Variables

Goff (1969) attempted to develop an index of difficulty using as criteria something other than closed rehabilitated or non-rehabilitated. The average time, computed in months, from the client's acceptance to closure was considered an indicator of difficulty. However, the assumption that time on caseload is directly related to difficulty is questionable. While in some cases time on caseload may indicate the severity of the disability or a motivational deficiency, in other instances it may only indicate that the client is in an extended training program. The multiple correlation (R) was only .17 when all 16 demographic variables were included. It is difficult to ascertain whether the lower multiple correlation was due to the variables studied or the use of average time on caseload as a measure of difficulty.

Kunce, et al. (1969) found no relationship between treatment time and either job placement or job salary with culturally disadvantaged clients. However, there was a significant relationship ($p<.01$) between treatment time and job level. The relationship probably reflects the effects of longer training programs, as treatment time was significantly related to intelligence ($p<.05$). Other than training potential, time on caseload may be measuring the client's educational aspirations (college vs. trade school), the amount of time the client feels he can devote to training, caseload management variables or a multitude of other factors.

Although time on caseload may be an unreliable indicator of case difficulty, counselor time spent on an individual case might be more valuable. However, accurate information would be difficult to procure in any large scale research and would be extremely difficult to implement on an ongoing basis. When evaluating the importance of counselor time, it is important to consider the type of activity in which the counselor is engaged during the time he has allocated. Otherwise, the filling out of routine forms would have weight equal to counseling and guidance with an extremely difficult case. Recording the type of activity in which the counselor was engaged would further complicate the task of gathering data and increase the amount of counselor time spent in routine clerical tasks. Even if the data on counselor time were available, the question would remain whether the measure would reflect case difficulty or the efficiency with which the counselor manages his time. A system of weights for case difficulty based on counselor time may only serve to penalize good caseload managers.

Lawlis and Bozarth (1971) analyzed cost and administrative variables in a stepwise regression with "rehabilitations per counselor." The strongest partial correlation was with "average cost per rehabilitation" ($r=-.68$) and "case services expenditures average per counselor" ($r=.45$). The authors suggested that average case service expenditures per counselor is a "quantity" type of measure showing that if counselors spent more money on more people, the re-

sult is more rehabilitations. They suggest that the more money spent per rehabilitation is a "quality" measure indicating that counselors are working with more complex cases. However, these variables may be more concerned with availability and utilization of resources than the difficulty of a particular client or caseload.

Kunce, et al. (1969), when looking at the relationship between cost of services provided culturally disadvantaged clients, found that cost of services was unrelated to job placement, job salary or yearly income. However, cost of services was related to job level, which the authors explain as reflecting expenditures for training.

It should be remembered when comparing the results of Lawlis, Bozarth and Kunce, et al., the criterion variable in Lawlis and Bozarth was rehabilitations per counselor, while in Kunce, et al., the criterion variable was job placement, salary and yearly income. Again, as with time on caseload, cost variables may indicate difficulty in some cases. Cost can vary due to considerations unrelated or only tangentially related to difficulty, such as localized cost differences for providing the same services, training potential, willingness to engage in long term training, or caseload management variables.

Even if a case weighting system could be based on cost and administrative variables, it may be dangerous to implement as an ongoing system. By evaluating counselors and agencies on the bases of case service expenditures, time on caseload, etc., the system may effectively transfer the focus of attention from the client's problems and needs to administrative procedures. As an example, if a negative weight is attached to case service expenditures, the message to the counselor is "don't spend money or your evaluation will go down." Of course, the opposite message is sent if a positive weight would be used. The system will react to whatever weighting system is devised. In fact, abuses encouraged by the present closure system are largely responsible for the search for a weighting system.

Summary

The magnitude of the problems encountered when attempting to develop difficulty indexes or weighting systems may well be reflected in the fact that the relevant research indicates as many problems as solutions. Silver (1967) avoided some of the problems inherent in using successful closure as a criterion by obtaining counselor estimates of difficulty for various impairments. Other authors have used successful closure as the only criterion of difficulty. Sermon (1971), using percent rehabilitated in each disability group as a base measure and establishing the base on a national sample, effectively averaged out the other relevant variables. This method may be usable for establishing total agency difficulty, but results in a system of limited usefulness when applied to a caseload or individual case. Miller and Barillas concluded that their results:

> "...can only be considered exploratory and very tentative" (Miller and Barillas, 1967, p. 120).

Wallis and Bozarth (1971) indicated that their system is no better than

present closure goals. The most successful index of difficulty was reported by Kunce and Miller (1972). However, the authors did not address themselves to counselor time and effort.

It seems that one of the primary problems is defining what is meant by case difficulty. Most often it is equated with *probability of successful* closure and counselor time and effort. Difficulty, in terms of counselor effort, can be best rated by the counselors themselves, as was done by Silver (1967). The outside resources available, the amount and intensity of personal counseling required, and agency characteristics all figure into the amount of effort a counselor must put into rehabilitating a client or type of client. Difficulty has been primarily viewed in terms of probability success. Probability of success is not only affected by the client's motivation, severity of disability and personal resources, but also whether the present system is capable of meeting his individual needs, the community attitudes toward his disability and his relationship to the individual counselor and the agency setting.

It might be useful to separate the severity of the client's handicap from program, agency and community variables and relate them to the difficulty the counselor experienced with the case before combining them into an index of difficulty.

A third problem noted by Grigg, Holtmann and Martin (1970) and Wallis and Bozarth (1971) is that variables related to acceptance and outcome may be different and vary in importance in relation to these different phases of the rehabilitation process.

Given the complexity of the problem, the tools presently available have limited usefulness. Demographic characteristics have been shown to have low predictive relationship to outcome, and psychometric data adds little knowledge in terms of the difficulty of the individual case. Again, as noted with prediction studies, there seems to be too much variation within demographic groups on important employment related variables.

CHAPTER III

Problems In The Measurement Of Difficulty

The development of an adequate measure of case difficulty would be of considerable importance to the field of rehabilitation in that it would aid administrators and counselors in assessing performance. Efforts in this area have been noted in Chapter II, "Research Into Case Difficulty." A primary consideration for the establishment of an adequate research design is an operational definition of case difficulty. The meaning of

case difficulty seems to vary from one investigator to another, with no clear useful definition having yet been developed. Silver (1967) leaves the definition of difficulty up to the counselor's subjective impressions. Goff (1969) attempted to operationalize difficulty in terms of total months between acceptance and closure--a procedure which fails to account for numerous intervening and extraneous variables present in various degrees in the course of rehabilitation. Other investigators (Wallis and Bozarth 1971; Miller and Barillas 1967; Sermon 1972) have defined difficulty in terms of the probability of successful closure.

Criteria Variables

The lack of generally accepted criteria represents the greatest single problem for research into case difficulty. The same lack of information and ambiguity that makes the "26" closure inadequate as an administrative tool renders it of little utility as a research variable.

If a variable is found to be significantly related to closure status, it remains unknown whether the variable is related to the ability to maintain part-time sheltered employment, full-time sheltered employment, part-time competitive employment, full-time competitive employment, performance of household chores, all of the above, some of the above, or perhaps even none of the above. Not only is little known about the "success" category, but also many failures may not really be failures, and significant gains have been made by clients presently closed as not-rehabilitated.

Cobb (1969), in an extensive review of studies on prediction of rehabilitation success with adult mentally retarded, discussed the problem of variation within such criterion variables. He concluded that the contradictory nature of findings regarding prediction of vocational success resulted from the fact that investigators have made the false assumption of uniformity within their success-failure populations.

> If there are different identifiable sub-groups within a general population for which different standards of performance may hold, this must be reflected in the construction of experimental and statistical designs. Similarly, terms like "success" and "failure" are in themselves meaningless unless the referent variables are specified and with sufficient clarity as to avoid ambiguity (Cobb, 1969, p. 10).

The Study Group on Uniformity of Standards for Termination of Services to Clients (1969) surveyed state agencies to determine current closure standards and how they were applied. They found that most written standards were general in nature and a lack of specific agency standards for situations were not included in federal regulations. There is little consistency in guidelines or philosophy even in those areas covered by federal regulations. This leaves open the possibility that a client closed rehabilitated in one state will be closed not-rehabilitated in another.

Attempts at circumventing the problem of using closure status as a criterion measure usually involves the use of numerous criterion variables. Coone and Barry (1972) note that often criterion variables are highly ambiguous. They argue for the use of behavioral referents

rather than hypothetical constructs, and admonish investigators to carefully specify the criterion variables selected.

Bolton (1972) acknowledges the problems of the numerous criteria. He states that the only solution presently available is to collect numerous criterion data and analyze the data in terms of each criterion independently and for a few selected combined criteria. Kunce and Miller (1972) not only were careful to state their experimental criterion variables, but also gave the correlations among the three criteria. This allows for a more meaningful interpretation of results and facilitates comparisons across studies.

Even with more clearly defined measures of rehabilitation success, the amount of time and effort required of the counselor to achieve the successful rehabilitation is also a factor in case difficulty. Time and effort are probably best rated by the counselor himself as was done by Silver (1967). The counselor's personal firsthand information has been largely ignored as a source of data. In fact, the counselor could be the best determiner of case difficulty, especially when dealing with those cases on his caseload. If a system of weighting could be devised that demonstrated a relationship to outcome and at the same time a relationship to counselor ratings of the difficulty he experienced with the case, a good argument could be made that, within the context of present rehabilitation setting, the instrument is a measure of difficulty.

Independent Variables

The independent variables should be selected, organized and defined as precisely as the criterion. Bolton (1972) notes that even in the case of biographical data, most agencies and research projects collect slightly different information and record it differently. The sheer number of possible variables that could be associated with case difficulty presents a problem in itself. Cooke and Barry (1970) note that when a large number of variables are utilized in any one study, the investigator usually has little opportunity to discuss the findings regarding each variable. They emphasize that an attempt should be made to explain why each variable is or is not correlated with the criterion.

Another consideration possibly affecting the structure of the variables studied is "at what point in the rehabilitation process is difficulty to be determined?" If difficulty is to be determined at referral or acceptance, the data must not only be available but also reliable at that time. This is especially true if counselor judgment of the client is to be used as part of a difficulty index. If an index is developed to determine case difficulty prior to closure, then the design of the research is predictive in nature and must take into account the stability of the predictions over time.

Sample

The diversity of the rehabilitation population necessitates careful attention to the adequacy of the sample on which any index or difficulty is tested. The multiplicity of disabilities, social and economic backgrounds, and variations in state agency programs make testing of a difficulty index a formidable task.

The inconsistent results of many of the prediction studies mentioned

in Chapter I stem directly from the limited nature of the samples. A random sampling of the population about which one hopes to generalize is necessary if consistent findings are to be obtained. In addition to an extensive description of the research sample, care should be taken to insure that the relationship of the index or measure with the criterion studied is consistent among different groups.

Analysis

Although many highly technical statistical tools are available to the researcher, statistical "significance" can never be substituted for hypothesis building and logical explanations of the results. Care must be taken in choosing even relatively simple analysis, and the nature and assumptions underlying the statistic must be considered. Bolton notes the assumption of linear relationships underlying the Pearson correlation coefficient as being questionable with many variables. He suggests the preparation of scatter plots prior to calculating correlation coefficients. The word "significance" or significant can also be a source of confusion. Wittenborn (1952) states that the technical meaning of statistical significance is often lost and the word "significant" is interpreted in terms of the layman's meaning. He states:

> Actually, highly significant differences may not only have a trivial relevance for the problem under consideration (whether it's the validity of a hypothesis or the value of a procedure), but such differences may not be at all relevant to the problem under consideration and may as a matter of fact be an expression of some uncontrolled, possibly unrecognized factor in timing, scoring, or subjects, etc. (Wittenborn, 1952, p. 34).

As the sophistication of the statistical analysis increases, the limitations of the research design becomes increasingly important. Kunce (1971) notes that sophisticated statistical techniques can maximize chance relationships as much as valid ones, and that caution must be used before attempting to generalize findings outside of sample populations, especially when relatively small samples are used. Bolton argues for the use of multivariate analysis, but also states that, for prediction:

> Seldom are more than five independent variables necessary in a linear composite. Not only is a point of diminishing returns reached quickly, but the chance of fitting sampling error becomes increasingly great, resulting in considerable shrinkage on cross-validation (Bolton, 1972, p. 19).

With the use of computers and packaged statistical programs, high levels of statistical sophistication are easily achieved. However, it is meaningless without equally sophisticated research design and interpretation of results.

Summary

Presently the most critical problem in case difficulty research is the inadequacy of the criterion variables. The use of successful closure as a criterion has accomplished little. Studies that use closure as the criterion measure become predictive studies of a vague, ambiguous, and inadequate measure of "success." Before attempting to further investigate the variables that impede suc-

cess and make cases difficult, it would be profitable to first adequately measure "success." It would be far more meaningful to relate variables to degrees of client change or gain than to artificial success-failure categories.

When an adequate measure of client change is developed, prediction and study of the variables related to success can proceed. However, this does not solve the problem of a criterion measure of case difficulty, because of the inadequate definition of case difficulty. If prediction of success is case difficulty, it should be called prediction of success. If counselor time and effort is case difficulty, perhaps time and effort should be measured rather than success. However, counselor time and effort may not be difficulty either. "Difficult" cases are often transferred to rehabilitation centers, and difficulty may be experienced by a physical therapist, a psychologist or a home teacher as much as by a counselor. Now is a good time to reconsider what is important to measure and why it is being measured.

When "difficulty," time and effort, or success become more precisely defined, the research problems can then be approached. Often these problems involve only what is required of sound research for any problem. The size and heterogeneity of the rehabilitation population demand a large sample size, and care must be taken to insure that the measures are equally applicable to the many different subgroups within the population. Care must be taken in the *selection* of the statistical tools, so that the analysis used are appropriate to the problem, population and sample. These research problems can be effectively approached after, and only after, the problem is precisely defined and adequate criterion measures are developed.

CHAPTER IV

Client Change

The whole purpose of the rehabilitation process is to effect some kind of change in the individual client that will result in the client's increased economic, social and personal independence. Yet, the traditional closure system tells us little about clients served by rehabilitation agencies.

Hawryluk (1972) criticizes the crude closed-rehabilitated system as allowing only gross distinctions between clients who are temporarily 100 percent successful and those temporarily 100 percent unsuccessful. It is questionable if the closure system even serves this function. If the goal of rehabilitation is to help the client attain his potential economically, vocationally, personally and so-

cially, then knowing the client has been on a job 30 days can only distinguish the partly successful from the partly unsuccessful. In the case of the homemaker closure, unpaid family workers and other nonsalaried categories, even less is known. Not only does the closure system tell us very little, but it also inhibits the achievement of goals it so weakly reflects. As Hawryluk notes:

> The purpose of an outcome criterion is to direct the energies and talents of an organization to those activities that will most further the goals of the organization. Situations can arise, however, where the satisfaction of an outcome criterion becomes an end in itself. Rehabilitation counselors are more and more openly challenging the head-counting which is being used to evaluate counselor performance. Counselors tend to see their role in a therapeutic vein but feel they are increasingly constrained to focus time and attention on meeting numeric quotas. The pressure to meet the "closed-placed" quota often conflicts with the needs of good rehabilitation practices. (Hawryluk, 1972, p. 23).

He cites several research studies demonstrating rather powerfully the tendency of executives and administrators to emphasize activities that are easily measured even at the expense of organizational objectives.

As the vocational rehabilitation program has expanded its goal and served new client groups, the problems of the present closure system have become magnified. In an attempt to help disabled persons become truly independent, vocational rehabilitation has expanded its services to touch almost all areas of the client's life. To adequately assess the effectiveness of vocational rehabilitation, outcome measures must be implemented that reflect change not only in the economic-vocational area of the client's life, but also the physical, psychological and social areas. Most of the research relevant to client change has centered around the economic-vocational area, with little attention given to measuring change in the psychological and social areas. Even less research attention has been given to developing change measures for use in the everyday rehabilitation setting. Change in economic and vocational status has been used as a criterion measure by some researchers, but change is usually measured in terms of changes in weekly earnings, reduction of welfare grants, job level and job placement. These types of changes are readily accessible; however, at best such items are inadequate, as they reflect only a small part of the rehabilitation process. Numerous authors (Cook, 1967; Kelman and Willner, 1962; and Shoben, 1953) have contended that a major ingredient, if not a primary force, in client change lies in the psychosocial area. Krantz (1971) includes behaviors toward supervisors and coworkers in his listing of critical vocational behaviors. He also lists critical employment-coupled behaviors under the general headings of social living competencies, community living competencies, and general and personal living competencies. These, he states, are:

> Other behaviors, not directly vocational, which must be emitted by the client at a critical minimum in order for him to function in

employment (Krantz, 1971, p. 15).

Whether it is called ego strength, interpersonal competence, ability to cope, social competency, maturity, or self-sufficiency, an adequate measure of rehabilitation outcome must have some measure of the client's ability to be personally, as well as financially, independent. The long range success of the client may well be more dependent on the client's ability to make appropriate decisions, act on them, and establish good personal relationships, than on holding a job the required 30 days before closure.

Recognizing the inadequacy of the present closure system, Reagles, Wright and Butler (1970) developed the Rehabilitation Gains Scale to assess the feasibility of considering rehabilitation gain as a single scalable variable. The scale utilized self-reported data on such items as physical condition, source of income, weekly earnings, chances of getting a job, future plans, mental health and social activities. The scale is a pre-and post-rehabilitation measure which gives a pre-level, post-level and gain score for each client.

In general, the items were found to be suitable for a self-report instrument. Items concerning the client's problems finding a job, social activities, type of job and weekly earnings were fairly reliable when the client was cooperative. However, serious questions can be raised concerning the reliability and validity of responses when the client was asked to rate his physical health, mental health and emotional adjustment. In attempting to establish reliability and validity, the authors used a reciprocal averaging (RAVE) technique in analyzing the data and concluded that the single variable--rehabilitation gain--could be operationalized in this way:

> The reliability coefficient yielded by the RAVE analysis (.71) was interpreted as moderately high for a scale composed of many seemingly unrelated items. The pattern of derived weights, item-to-total score correlations, and inter-item correlations were all in acceptable limits and added support to the feasibility of constructing a scale of rehabilitation gain (Reagles, Wright and Butler, 1970, p. XIII-58).

The authors note that selection of items was limited to items already in the Woods County Project Client Test Battery and, therefore, the scale was limited in scope and did not fully reflect rehabilitation gain.

Considerations for Measurement of Client Change

Although the ambiguous "26" closure has often been criticized as a measure of success in rehabilitation, the Rehabilitation Gains Scale is the only substantial effort to provide an alternative to the present closure system. The considerations mentioned in this section are part of the reason for this neglect, and form a context for the discussion of change measures.

To measure adequately the outcome of Vocational Rehabilitation's services, a measure of client change must be developed that reflects change in the physical, educational and psychosocial areas of the client's life as well as the traditional economic/vocational area. In order to accomplish this goal, any measure of client change must demonstrate that:

(1) the measure is administratively feasible;

(2) the measure yields reliable information when used across agencies, programs and counselors; and

(3) the content of the measure reflects the real world concerns and goals of Vocational Rehabilitation.

To be of any utility in agency, program or counselor evaluation, any measure of client change must yield valid and reliable results when used in the everyday rehabilitation setting. The rehabilitation setting places many restrictions and sets in context the development of measures of client change. The States Advisory Committee for Service Outcome Measurement Project (RSA EV-3-73) discussed several criteria a measure of client change should meet in order to be administratively feasible. These included:

(1) Change should be measured for all clients regardless of closure status;

(2) The measure should require no changes in service delivery systems;

(3) The measure should not require sophisticated electronic data processing equipment

(4) The measure should be easily interpreted

(5) The measure should require little in-service training; and

(6) The instrument should not require more than about ten minutes of the counselor's time per case.

Given these administrative limitations, the next consideration is the source of information for a measure of client change. Reagles, et al. (1970) used information provided directly by the client in the form of a self-report instrument. However, self-report instruments, questionnaires and tests require the client be both available and cooperative. Although clients, whose cases have been closed rehabilitated, may be willing to cooperate, questionnaires and test materials may be impractical to be used for non-rehabilitated categories.

Hills and Ledgerwood (1972a, 1972b) report response rates on a consumer measurement questionnaire. The questionnaires were either handed to the client or mailed to the client at closure. The average response rate was 13 percent in North Dakota for all closure categories. In New Mexico, questionnaires were mailed to "26" closures and the response rate was 26.6 percent. This indicates that a self-report instrument may not be feasible for use outside of a research setting.

The original problem has now expanded to one of developing a measure of client change in physical, educational, economic, vocational and psychosocial areas which (1) requires only ten minutes of the counselor's time; (2) is simple to score and interpret; (3) requires little training; (4) is applicable to all clients; and (5) utilizes information provided by the counselor.

Some of the data needed for a measure of client change is presently being gathered. Job status, weekly earnings, academic education, and public assistance status are important aspects of change and present no large scale measurement problem. However, the physical psychological and social changes are not as easily measured. In fact, considering the limitations mentioned above, it would seem necessary to rely on some sort of professional

judgment on the part of the counselor for the measurement of many aspects of change. If this is to be the case, great care must be taken to insure that the judgments made are sufficiently standardized to allow comparisons across counselors and agencies. In a conference on the use of judgments as data, the National Association of Social Workers (1958) reviewed the kinds of judgments used by researchers and practitioners. In the prologue to the conference, Shyne noted the pervasive use of judgments as data in social work research and that complex, inferential judgments about abstractions present a most serious methodological problem in social work research.

The proceedings of the conference also included a paper by Hunt in which he stated that the clinician and client were ideal sources of information. However, he acknowledged fallibility of the sources, and mentioned ways of standardizing judgments such as: (1) content analysis of the reasons given by clinicians for their judgments; (2) rater training; and (3) stating behavior to be observed in the most concrete possible terms.

Westerheide and Lenhart (1973) tested the reliability of a measure of rehabilitation client functioning which was composed of 23 five-point rating scales. The scales were designed to measure client functioning in physical area (six items), adjustment to disability (three items), social competency (four items), economic/vocational status (five items), and also five additional items related only to case difficulty, which included work history, availability of facilities and prognostic items. They utilized five counselors in each of three states (Colorado, New Mexico and Texas) who completed the scales on ten test cases. Reliability for the area scores ranged from .69 to .95 for the 15 counselors with the total score reliability being .93. Analysis of consistent error or halo effect in ratings indicated that these sources of variation were also held to a minimum. The results of this study indicate that rehabilitation counselors judgments can be sufficiently standardized to allow meaningful comparison to be made across counselors.

A considerable amount of work has been done in psychotherapy and social work to show improvement in psychological and social functioning. Attempts at developing ongoing measures of client change in these fields have employed rating scales filled out by either the therapist or the social worker. These scales have ranged from ratings of abstract psychic process to recording the presence of an alarm clock in the home. Rogers' Process Scale, the Movement Scale, and Hetzler's Case Severity and Movement Scale are examples of the use of judgments in the measurement of change. These scales range from vague to very specific in the information they require, but each has implications for developing a measure of client change for rehabilitation.

Rogers' Process Scale

Rogers (1959), dissatisfied with the usual approaches to evaluating progress in psychotherapy, listened to many recorded therapeutic interviews, and subsequently gleaned several observations which led him to believe that there is an underlying process in therapy which indicates emotional growth. This underlying

process was seen as a continuum from rigidity and fixity of psychological functioning to a psychological flow and changingness. He believed that between those polar points there was a continuum which can be differentiated into any number of points. He selected seven discriminate strands which could be distinguished one from another. These strands were: (a) feelings on personal meanings, (b) experiencing, (c) incongruence, (d) communication of self, (e) construing of experience, (f) relationship to problems, and (g) manner of relating. Continuing the work in this area, Walker, Rablen and Rogers (1960) presented a refined process scale based on further analysis and study of protocols. Following further refinement of the process scale by Rogers (1961), Tomlinson and Hart (1962) completed a validation study. The following conclusions were reached about the process scales:

- Interjudge agreement, is always adequate and significantly better than chance, as estimated by parametric and non-parametric statistics. Interjudge reliability appears to have a minimum of about .60.

- It distinguished between more successful and less successful cases at a high level of statistical significance.

- It indicates that more successful cases begin as well as end at a significantly higher level of process.

- There is evidence that there is greater movement (process change) on the Process Scale during the period of therapy in more sucessful than in less successful cases. The difference is only modestly significant and its utility is yet to be determined.

- There is a tendency for the second half of each interview to be rated higher on the Process Scale than the first half. This tendency toward intra-interview change is definitely significant in the more successful group of cases (Tomlinson and Hart, 1962, p. 78).

The low reliability found by Tomlinson and Hart (1962), using only two judges, renders this type of scale of little use to a system as large and varied as vocational rehabilitation. Reliability is a major problem of scales requiring global judgments of this type.

Movement Scale

In an attempt to measure client progress through treatment, Hunt and Kogan (1952) developed the Movement Scale. Since the introduction of their movement scale, other contributors (Goodman, 1958; and Shyne and Kogan, 1958) have studied and elaborated upon it. Hunt and Kogan's movement scale attempted to summarize the multiplicity of problems, services and effects of casework on the individual client in terms of a unitary variable. Movement was seen as a positive or negative change in the client's situation between case opening and closing. The scale was made of seven step intervals labeled minus two, minus one, zero, plus one, plus two, plus three, and plus four.

In the initial stages of scale development selected persons were

asked to give their reasons for the ratings given to each of the 38 test cases, and these reasons were then subjected to study and analysis. As a result, certain classes of evidence emerged which served as a basis for judging movement or lack of movement. Factors or standards mentioned by some workers but not by others were analyzed and committee decisions were made on points of ambiguity. As a result of revisions, movement was seen as a change in (a) adaptive efficiency, (b) disabling habits and conditions, (c) verbalized attitudes and understanding of an individual client, and/or (d) client's environmental situation between case opening and closing. Anchoring case illustrations were affixed to the +4, +2, 0, −2 intervals, and after considerable training, caseworkers could make judgments with a reliability of .80. It was recognized by the authors that this was not a particularly high level of reliability, but it was at least a known reliability.

Shyne, et al. (1958) felt that the movement scale was limited in information about the level of client adjustment at case opening or closing. Furthermore, the instrument provided only a single global score with no information about differential change in adaptive efficiency, disabling conditions, or attitudes and relationships in environmental circumstances. Therefore, the original study was augmented to include a plan to identify the interrelationships among the variables. A considerable degree of independence was indicated among the factors. Thus, it was concluded that a client could show differential change in various areas of functioning. Also, aspects of his world could move differentially and at a rate different from his attitudes and behavior.

Case Severity and Movement Scale

Hetzler (1963) defined the criteria of a feasible movement scale for social work as follows:

> A case movement scale should be easy to score and it should perform two basic functions. First, it should yield as nearly as possible an *absolute index* of family status at the time of intake. The caseworker's use of the scale at this point would guide him in gathering first hand information about the family. Second, when reapplied at annual or semiannual intervals, the scale should measure both the *direction and the degree* of movement. A single scale should be used to measure the severity of a case at the point of intake and to chart subsequent movement (Hetzler, 1963, p. 445).

Hetzler was dissatisfied with the fact that most case movement scales rely heavily on subjective judgment. He postulated that evidence of movement can be detected in the physical changes in the home and in changes in behavior or interrelationships among the family and other household members, and that more effective measurement of movement can be had by a scale utilizing finite observable criteria. The scale asked the rater to record such things as the presence of an alarm clock, telephone, television, and the available bed space. Utilizing seven topical headings, Hetzler developed 57 discreet items, with 48 of the 57 items requiring little more than a simple counting procedure. Each item was assigned a set of algebraic weights, with the grand score consisting of the summed sub-scores of each of the topical

areas. Case severity was determined by the plus or minus status of the grand score relative to a zero center point. Direction and degree of movement were obtained simply by comparing new scores with old ones. The scale was tested by comparing the score of the rater with that of his immediate supervisor, with the supervisor only rating the topical areas. The overall correlation of supervisor ratings and the scale score was .70. The highest correlation in the topical areas was on that of "school progress" (.61), and the lowest correlation was with "financial management" (.07).

Summary

There is a great need in Vocational Rehabilitation for a more comprehensive measure of client change. The basic requirements of an expanded change measure are: (1) the measure should reflect the real world concerns of Vocational Rehabilitation; (2) it should be administratively feasible; and (3) it should give reliable information when used across agencies, programs and counselors.

It was noted that a change measure should indicate changes in physical, educational, and psychosocial areas, as well as the economic/vocational areas. Within each of these areas measures should be constructed that reflect the goals of rehabilitation.

Administrative limitations include: (1) the amount of counselor time available for measuring change, (2) the amount of time available for training in the use of the instrument, and (3) the capability of being implemented without modifying the present service delivery system. In addition, due to the lack of availability of many clients at closure, it seems necessary to utilize some form of counselor judgment or a basis for measuring change. The problem then is to standardize counselor judgment sufficiently to allow comparison across counselors.

Rogers' Process Scale, The Movement Scale, and Hetzler's Case Severity and Movement Scale were reviewed as examples of attempts to measure movement or client change in psychotherapy and social work.

The advantages of rating scales are that: (1) they do not require the presence or overt cooperation of the client; (2) they are easy to score; and (3) they require little time to complete. A major pitfall with the use of rating scales is that of inter-rater reliability. Even if the instrument is attending to the appropriate variables, inter-rater reliability becomes especially critical if the instrument is to be used on a large scale, such as in vocational rehabilitation agencies, and little time can be devoted to rater training.

Hetzler attempted to free himself of this difficulty by using items that involved only observations of physical situations or highly structured ratings. However, it is difficult to show a direct meaningful relationship between case severity in social work and possessing an alarm clock, telephone, sofa, type of floor covering and food shopping habits. On the other hand, asking a social worker to rate a family's adjustment on a scale from -2 to +4 may also be tenuous. With the method Hetzler used, the major problem is establishing validity, while with more vaguely defined rating scales, the problem is reliability.

CHAPTER V

Conclusions

The deficiencies of the present closure system is a source of concern and irritation to everyone involved in Vocational Rehabilitation. The most often mentioned alternative to the closure system has been a weighted case closure system with the weights based on the relative case difficulty. Difficulty has not, however, been precisely defined. In general, difficulty refers to the amount of time, effort, worry and work required of the counselor during the rehabilitation process. It can also include the time, effort and money expended by other persons and agencies on behalf of the client. The question might be asked, "Difficult to whom?" If the goal of the difficulty determination is to evaluate the individual counselor, then the counselor's effort is the focus of concern. If the goal is evaluation of the service delivery system, all components of that system are involved. If the question is raised to the social level, the difficulty determination must include not only the delivery system itself, but also the effort expended by other groups, agencies or individuals, regardless of whether the services are bought or donated.

Several investigators (Miller and Barillas 1967; Sermon 1972; Wallis and Bozarth 1971) have attempted to operationalize difficulty in terms of probability of successful (e.g. "26" closure) rehabilitation. However, this approach has not been overly productive. Much of the problem lies with the use of the ambiguous status "26" closure as a measure of rehabilitation success. An individual client can vary considerably in terms of "difficulty" depending on whether his vocational goal was competitive employment, sheltered employment, homemaker or unpaid family worker. Since the "26" closure is used as a measure of "success" of the client, it is not surprising that previous research has accomplished little toward measuring the difficulty with which the success was achieved. Silver (1967) utilized counselor ratings of difficulty, with difficulty defined as the amount of time and effort required to reach case closure. Again, the method is tied to the present closure system. As long as case difficulty is tied to the "26" closure system, it may do little to relieve the present agency, program and counselor evaluation problems that are hampering good rehabilitation practice. The primary problem that must be dealt with before evaluation of vocational rehabilitation services can proceed must be a more adequate measure of client change than is available with the "26" closure. When this is accomplished, measures of the "difficulty," resources and energy required to produce change can be

developed.

In order to develop adequate measure of client change, it should be remembered that the client's disability does not exist by itself, but in a physical, psychological, social and economic context that places both restrictions and demands on the individual. The client's ability to cope with his situation requires that he acquire or maintain at least a minimum level of functioning in all of these areas. Not only are there several levels of analysis, but these levels, rather than being independent, interact to such a degree that the knowledge of the client's ability to cope at one level allows only gross generalizations about the client's ability to cope with his life situation. In order to evaluate adequately the effect on rehabilitation services on clients, all levels of analysis must be considered.

Measures of client functioning and client change need to be established that reflect real world goals of vocational rehabilitation. The problems the counselor and client face in an effort to return the client to productive employment can be greatly distorted if couched in medical and psychiatric terminology. After the eligibility has been established, the emphasis must be changed. Nagi (1969) noted that the emphasis in rehabilitation should be on what the client can do. The problem in rehabilitation is not cerebral palsy, glaucoma, malignant neoplasm or schizophrenia, but rather the type of employment the client will be able to do, what the client wants to do, and the steps necessary to help the client reach his potential. By the same token, tests such as the MMPI are only of limited usefulness in indicating to the counselor how the client will get along with his co-workers and/or his orientation to the worker role. This is not to say these types of data are unimportant, but what is normally found is an overemphasis on the factors related to employability and not the critical behaviors and attitudes necessary in an employment situation. Medical models are used when speaking of the disability and psychiatric models when speaking of the client's adjustment, when what is needed is an employability model stated in terms of the level of client functioning in relation to employment.

Vocational Rehabilitation is charged by law with helping disabled people reach the goal of employment. In working toward this goal, the rehabilitation counselor works in many areas of the client's total life. These areas might be categorized as physical, educational, vocational, economic and psychosocial. Within this, or a similar breakdown, a client's strengths and weaknesses in terms of employability could be established.

In the physical area, questions should be asked about the client's work tolerance, in terms of the time he could continue working, and type of work he could perform. Does the client have or can he develop skills which help compensate for his disability? Does he have secondary or multiple disabilities with which he must cope? What is the client's general health status other than the disability? Will the client miss work often?

The client's educational background, learning ability and present skill level are important considerations for an employability model. Relevant to the model would be the relationship to the client's job skills to the current labor market, and the availability of training.

The vocational and economic areas would address themselves to the client's work status, employment type, his dependence on others for financial support, source of support, weekly earnings or pressing financial problems that might lead the client to terminate services early.

The psychological and social effects of the client's disability are the most difficult to measure, but information is needed in reference to prevocational skills and other social skills. How does the client identify with the worker role? Will he be able to get along with co-workers and supervisors? Are his employment expectations realistic? Is the client able to make decisions and implement plans for attaining future goals? Is his family supportive, or do they misunderstand his illness and present an obstacle to the client's rehabilitation?

These are the types of questions an employability model would ask in rating client status and change. These are not factors unrelated to the medical and psychiatric models, but they concern themselves directly with the work of vocational rehabilitation. These are questions the counselor deals with every day and the answers determine his actions for every case. An employabiiity model does not ask the field staff to collect new information. In developing a measure of difficulty and movement from an employability model, it would involve quantifying and organizing data and judgments a counselor presently uses in everyday practice.

Within the context of an employability model, it will be possible to establish the client's level of functioning on entry into the program, thereby establishing the severity of the handicap. At closure the client status on the same variables could again be measured. The final measure not only gives information as to the client's status at closure, but also when compared to the previous measure, provides an index of client change.

Within the above framework three important effectiveness measures are derived. First, by establishing the client's level of economic, physical, educational and psychosocial functioning in relation to employment, the client population has been defined in terms of the goals of rehabilitation. Checks can then be made to determine whether the program is in fact serving the persons it is intended to serve. In addition, it helps focus attention on specific client problems. Secondly, by repeating the measure at closure, again the client's status is evaluated in terms of the goals of rehabilitation. And finally, an index of client change can be developed that measures differential amounts of change in individual clients.

By evaluating programs in terms of the above measures, many of the ill effects of the present closure system can be eliminated and effective program management enhanced.

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